## Energy Conservation Initiative (ECI) Project Summary Barton Lab Geneva, Facility 4935A

What We Did: The project upgraded Barton Hall laboratory building with a new building automated system with the newest digital control system. We installed new variable air boxes throughout the building for proper laboratory ventilation performance with occupancy based demand. We upgraded all the ventilation fans on each floor with new controls, new valves, damper actuators and variable speed drives. We also reconfigured some ductwork throughout the floors. The building exhaust system was brought up to modern code by installing a new exhaust manifold on the roof that allows for proper disbursement of exhaust effluent.

What It Cost: \$1,100,100 How Long It Took: 16 months. Completed January 2015. What We Saved: \$77,000 and 65 tons/per year carbon equivalent annually.

**Benefits:** Updating controls and replacing variable air volume boxes throughout the building addressed a significant differed maintenance item. The new controls enable the building to operate in a safer more comfortable manner.

The project was a success in updating outdated mechanical systems with newer more efficient systems reducing maintenance and energy use while improving comfort and lab safety for the occupants.

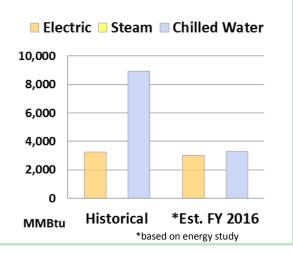
Mark Howe, P.E., CEM, Campus Energy Manager





## Map Utilities Costs and Use

Barton Lab Geneva Upgrade: Total Energy Use - Pre & Post EC



## **Barton Lab Geneva Upgrade: ECI Savings Table** \*Est. FY Historical Historical 2016 Energy \*Est. FY Energy Cost Annual Equivalent % Utility Energy Savings 2016 Cost REDUCTION (billed Use Savings \$ # Homes (MMBtu) Use (billed) (MMBtu) rates) (MMBtu) **Electric** 3,300 3,000 300 9% \$78,000 \$73,000 \$6,000 8 Steam **Chilled Water** 8,900 3,300 5,600 63% \$112,000 \$41,000 \$71,000 112 Totals 12,200 6,300 5,900 48% \$190,000 \$114,000 \$77,000 120

Energy use based on project scope Equivalent # Homes Savings based on average home use: 40 MMBtu Electric • 90 MMBtu Heat • 50 MMBtu Cooling



**Energy and Sustainability** 

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